

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
(Case No. 04-533)

In the Application of:	)	
	)	
Stewart Nathan Ridgley Swatton	)	Examiner: Eric Rush
	)	
Serial No.     10/501,113	)	
	)	Art Unit: 2624
Filed:             July 12, 2004	)	
	)	
Title:             Optical Biometric Sensor with Planar	)	Conf. No. 5615
Waveguide	)	

**REPLY TO THE EXAMINER'S ANSWER**

Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This is a Reply to Examiner's October 15, 2008 Answer in the above-identified Appeal.

**I.       THE REAL PARTY IN INTEREST**

The real party in interest of this pending application is QinetiQ Limited which is the owner by Assignment of the above-identified U.S. patent application.

**II.      RELATED APPEALS AND INTERFERENCES**

There are no Appeals or Interferences related to the above-identified U.S. Patent Application.

**III.     STATUS OF THE CLAIMS**

This application includes claims 1-9.

- Claims 2, 4-5 and 7 are cancelled from the application.

- Claims 1, 3, 6 and 8-9 remain pending in the application, stand finally rejected, and are the subject of this appeal.

#### **IV. RESPONSE TO THE EXAMINER'S ANSWER**

The Examiner's Answer crystallizes the disputed issues that must be decided by the Board. The central issue in this appeal is:

- Whether Johnson discloses an "interference filter" as that term is properly construed.

This raises several subsidiary issues including:

- How should the term "interference filter" in the claimed invention be defined?
- Whether or not the claimed "interference filter" and the alleged Johnson "interference" filter operate in different ways?

##### **A. Construing The Meaning Of The Claimed "Interference Filter" Feature**

The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1).

When the specification is considered as a whole it becomes apparent that the term "interference filter" refers to a multilayer filter that performs its filtering function by the use of optical interference effects. This interpretation would be clear to a skilled person because of the effect it has on the claimed device, i.e. it improves resolution by limiting the solid angle of light scattered from a given point and then detected. So the person skilled in the art at the time of the invention would appreciate that by "interference filter" we mean a multilayer filter that works by interference effects. The skilled person would appreciate that no other filter would produce the desired effect of increasing resolution.

## **B. Johnson Does Not Disclose The Claimed Interference Filter**

It is the Applicant's position that Johnson does not disclose the claimed "interference filter" as that term is broadly and properly construed – i.e., a multilayer filter that performs its filtering function by the use of optical interference effects. This is because the Johnson interference filter does not fall within the scope of the properly construed claim term. Moreover, this is because the claimed filter and the Johnson filter perform different functions making them different filters.

### **1. Johnson does not disclose the claimed "interference filter"**

It is the examiner's position that Johnson discloses the claimed interference filter. While Johnson discloses a filter that operates by "interference" principles, the type of "interference filtered" that the structure of the Johnson filter are different from that of the claimed interference filter making the two filters clearly different.

The examiner takes a position, on page 8, paragraphs 2 and 3 and page 9, lines 1-7 of the Answer, that an interference filter is disclosed in Johnson at column 4 , lines 24-26. However, what Johnson discloses is:

The sub-beams may be emitted sequentially in a burst and therefore sensed sequentially by a single-receptor photoelectric sensor. The photoelectric sensor may have a filter 20 or may be tuned to detect only the frequency of radiation emitted by the LED array so as to prevent interference from radiation from other sources. Alternatively, filters or shields may be installed on all exposed exterior surfaces of the prism to prevent admission of radiation to the prism from any source other than the LED array. The intensity of the

It is clear from Col. 4, lines 25-27 that by "interference" – the Johnson filter interferes with the transmission of light of any wavelength that is not the wavelength emitted by the LED array. This is the only use of the term "interference" in Johnson. Clearly what Johnson does not mean by "interference" is the specific optical phenomenon of interference.

The end result is that we have two different and disparate uses of the term "interference" to modify the term filter in the claims and in Johnson.

(a) Johnson's concept of "a filter for preventing 'interference' " i.e. a filter that stops certain wavelengths (i.e. any general filter), and

(b) the claimed "interference filter" is a particular type of filter that must have multiple layers and that works by interference effects, i.e., "interference filter 55 operates to reduce the solid angle of diverted light subtended by the CMOS detector array 52 at the point at which the individual's fingerprint ridge makes contact with the waveguide 56. This provides the sensor 50 with a greater resolution than that of the sensor 10." (See page 5, lines 6-9 of the specification). These two uses of the term "interference" in Johnson and in the claims are not the same, so there is no *prima facie* case of obviousness of any pending claim.

At the top of page 9 of the Answer, the examiner rebuts the Applicant's position that the alleged Johnson interference filter is not the same as the claimed interference filter stating "The argument that the filter of Johnson is not an interference filter merely because Johnson fails to call it an interference filter...is illogical considering that both filters....perform the same/similar function and are intended for the same/similar purposes." However, contrary to the examiner's position, the Johnson filter and the claimed "interference filter" do **not** perform the same function for at least the reasons recited above. Clearly the examiner's position in this regard is incorrect. Indeed, if Johnson had meant that the filter 20 was the sort of filter having multiple layers and operating by interference effects, he would have called it an "interference filter" as is normal in the field of optics.

### **C. Rebuttal Of The Examiner's Additional Arguments**

On page 10 of the Answer, the examiner says that applicant, in the Pre-Appeal brief, explained that an interference filter can be a band-pass filter. The examiner then concludes that that Johnson says his filter is a band-pass filter. From this the examiner concludes that Johnson's filter must be an interference filter. However, the examiner's reasoning is illogical. Just because Johnson's filter is a band-pass filter, that does not mean that his filter operates as an interference filter especially because Johnson does not describe or require the use of a filter that operates optically.

On page 11, the examiner says that the specification and claims do not recite the multilayer structure, or the fact that light which is more than a small deviation away from normal incidence is rejected. The multilayer structure of the claimed interference filter is implicit from the use of the term "interference filter". A skilled person at the time of the invention would know that that an "interference filter" that operates optically has a multilayer

structure. Moreover, the function of the interference filter, whereby light incident at an angle more than a small deviation away from normal incidence is filtered is actually explicitly disclosed in Figure 2 and in the discussion of the fact that our interference filter improves resolution. This behaviour is also implicit in the phrase "interference filter".

### **CONCLUSION**

The examiner has not established a prima facie case of obviousness of any pending application claim because the cited prior art, and in particular Johnson, fails to disclose an "interference" filter as that claim term is properly construed. Therefore, the Board is asked to overrule the examiner's final rejection and to remand the case for allowance of all pending application claims.

Respectfully submitted,

**McDONNELL BOEHNEN  
HULBERT & BERGHOFF**

Dated: November 14, 2008

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